

To: Washington State Weed Control Board

From: Ross Barkhurst

Subject: Executive Summary of Testimony for Nov 5, 2013

I am presenting new empirical data and facts which support my earlier testimony and that of the Washington Waterfowl Association. I have testified that "weed everywhere" and "commercial shellfish beds only" classifications for *zostera japonica* are ecologically unacceptable without acreage and location restrictions. I plan on showing the data, showing pictures, and answering questions in relaying my conclusions and recommendations. This likely cannot be adequately carried out under some of the limitations which have been relayed to me by your Executive Secretary. I will do my best and beg your forbearance.

New input for you includes;

1. An eelgrass map from Dumbald and Echeverria 2007.
2. The WDFW aerial waterfowl surveys of Willapa Bay for 2012/2013 migration season.
3. Pictures of waterfowl and *zj* interactions and evidence of heavy usage of *zj*.
4. Reference to a WRIA #24 sponsored study of salmonid smolt habitat preferences in Gray's Harbor, WA
5. A graph of chum salmon escapement numbers vs. time for Willapa Bay before during and after collateral damage to *zj* during the spray campaign on *spartina*. This was presented by WDFW in North of Falcon meetings for the public earlier this year. It shows failure to meet escapement goals seven out of the last eight years.

In summary these new facts further support the conclusion that without appropriate precautions and limitations the current classification of *zj* is ecologically unacceptable. It ensures management objectives cannot be met for at least six species in Willapa Bay and other marine areas. The classification will cause these problems whether spraying is allowed or not. Spraying will merely make bad things I will outline happen faster. The classification ensures the Shoreline Management Act will be violated in letter and intent.

WHAT TO DO?

1. Require an accurate, independent, peer reviewed determination of carrying capacity for waterfowl and salmonids before proposing any eelgrass control. Take no action that would lower carrying capacity for any species not regularly meeting management goals. Do not lower the goals. At least three species of waterfowl and two species of salmon do not meet this criteria in Willapa Bay, for example.

2. Take a "REAL ESTATE" approach to any impacts on eelgrass beds. That is Location, Location, Location. All eelgrass beds are not equal in ecological value. High value areas for areas for waterfowl, salmonids, and forage-fish need not be defoliated. Especially on public tidelands, there would be no excuse for such defoliation.

3. Insist that the "no net loss" requirement for *zostera marina* be strictly followed throughout the state. Return of historical beds prior to spartina spraying or other impacts should not be impeded. Be aware that the natural as well as man-caused annual variability of *zostera marina* beds would result in "ratcheting" these beds permanently out of existence under a regular poorly located and or poorly monitored program.

4. Do not spray eelgrass of either species on public tidelands.

5. Ensure forage fish production is maintained at healthy levels, and that eelgrass removal cannot impact this. Again an independent peer reviewed analysis must be done and utilized before any estuary would be subjected to chemical duckgrass (*zostera japonica*) removal.

RPB

To: Washington State Board of Natural Resources

From: Ross P. Barkhurst

Subject: The Eelgrass Removal Threat to Willapa Bay and Washington Estuaries

For some time there has been an aggressive attempt by the State Weed Control Board and the Department of Ecology to launch *zostera japonica* removal on a grand scale. The phrase "noxious weed everywhere" and public statements by growers that "we need to spray public tidelands" (and presumably get paid to do it) strike fear in the heart of any concerned taxpayer or naturalist.

Acreage limits are proposed to be non-existent. Even if adopted, they are likely to be insufficient, not science based, cause collateral damage, and fade away after a few years of inadequate monitoring. We cannot in good conscience sustain reductions in carrying capacity for any waterfowl, birds, fish, or marine plant which already routinely run below management goals. A little thought generates the six examples below.* Surely there are others.

Should Ecology generate an NPDES permit for imazamox, the current wording of DNR leases may allow spraying, with no acreage or habitat related limits, on DNR/public tidelands.

With only one clam lease by DNR in Willapa Bay, for example, we are in a position to protect the ecology on public tidelands with minimal impact on the economy. Please take action necessary to carry out such protections.

*Pacific Brant

Northern Pintail

American Widgeon

Chum Salmon (Willapa Bay)

Chinook Salmon (Willapa Bay)

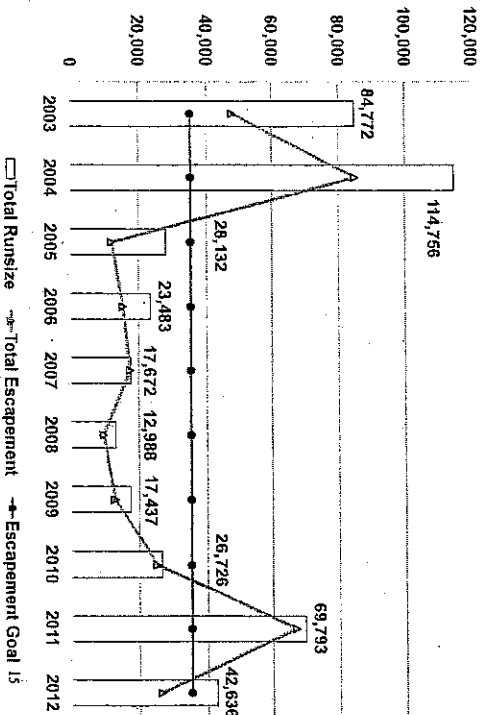
Zostera marina (Puget Sound, plus unmonitored net losses in Willapa Bay)

Willapa Bay Commercial and Sport Coho Catch Comparison

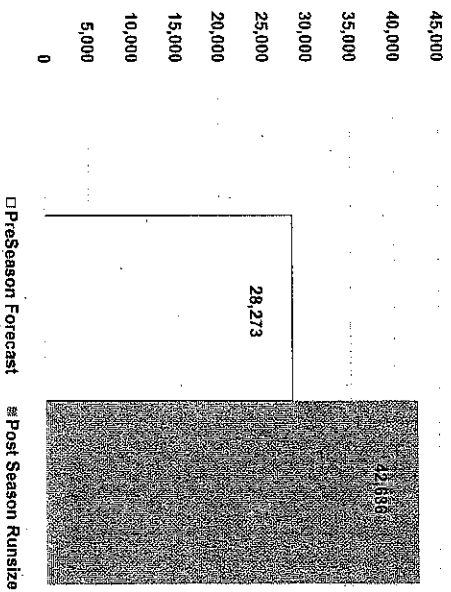
	Commercial	% of catch	Sport	% of Catch
2005	49,001	92.6%	3,892	7.4%
2006	19,948	96.1%	806	3.9%
2007	8,218	89.6%	955	10.4%
2008	16,699	93.2%	1,227	6.8%
2009 a/	75,417	92.1%	6,461	7.9%
2010 a/	38,112	88.5%	4,929	11.5%
2011 a/	48,173	89.2%	5,818	10.8%
2012 b/	25,891	na	na	na
Avg 2005-11	36,510	91.6%	3,441	8.4%

a/ sport CRC data preliminary b/ sport CRC data not yet available, includes non-harvest mortalities

Willapa Bay Chum



2012 Willapa Bay Chum Pre vs. Post Season Runsize



□ PreSeason Forecast ■ Post Season Runsize

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Willapa Bay Commercial and Sport Chum Catch Comparison

	Commercial	% of catch	Sport	% of Catch
2005	16,103	99.7%	46	0.3%
2006	8,065	98.0%	168	2.0%
2007 b/	280	100%	Non-Retention	0%
2008	3,377	97.1%	100	2.9%
2009 b/	4,694	100%	Non-Retention	0%
2010 a/ b/	1,514	100%	Non-Retention	0%
2011 a/ b/	2,917	100%	Non-Retention	0%
2012 b/	16,077	100%	Non-Retention	0%
Avg 2005-12	6,628	99.3%	105	1.7%

a/ sport CRC data preliminary b/ Non-retention fishery, includes non-harvest mortalities

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From: Ross Barkhurst [<mailto:rp.barkhurst@hotmail.com>]

Sent: Friday, November 01, 2013 2:01 PM

To: AGR MI Noxious Weeds

Subject: Pictures for the Weed Control Board

Some of my pictures, as I have said, are not e-mailable. Until you informed me of a "rule" that I cannot show pictures at the hearing, and they can only be e-mailed ahead of time, this was to be much of my presentation. I have sent some that are e-mailable. I will describe some of those that are not;

GOT DUCKS? Is a picture of thousands of pintail and widgeon last year over a japonica and marina bed at Sandy Point, Willapa Bay. They are massed on top of this important food. Oct 2012.

AFTERMATH is a picture of this mixed bed after most of the japonica had been grazed out. They hit this bed first, and then moved to others. Nov 2012.

Unrecovered Clones is a picture of spartina stubble on the Nemah Flats and shows how it is still inhibiting return of eelgrass. Beside the stubble are japonica beds, largely grubbed out by waterfowl. Nov 2012

"Pintail Candy" is a picture of japonica rhizomes exposed on a hump by turbulence of a storm. Oct 2012

"Rhizome Grubbing-mallard and pintail" is a classic picture of holes excavated by ducks when eating rhizomes of japonica. Nov 2012 Complete with webbed footprints and droppings.

Unrecovered ZM/ZJ bed-Meyer's Cove-Willapa Bay is a picture of japonica partially re-colonizing that location. Ridges of bare silt are so dynamic from sediment being released that even japonica has not re-established. The Dumbald and Eccheveria study figure I sent you shows this area covered with Z. marina also. There is none. This is an abandoned clam lease from DNR. Few clams, in or out of japonica. Spraying japonica here on a regular basis would preclude the ultimate return of marina. Clams will not return in numbers until the silt deluge is over and IF the overburden erodes back down to grit and gravel that used to be there. If it were permitted to dump gravel and remove japonica from such locations, marina would never return. Japonica would never become perennial with rhizomes. Brant and pintail forage would be eliminated forever. Widgeon would rapidly remove the few tops and move on. The japonica between the ridges is annual only now. No rhizomes. Where thousands of waterfowl foraged in Nov/Dec, now it is hundreds. When rhizomes are lost, much of the late food value is lost. Aug 2012. A gravel bearing stream enters Meyer's Cove. Connectivity and cover provided by both eelgrasses are key to return of salmonids to such places. Spraying or tilling around such a stream mouth is not. Location, location, location. This is expressed to talk about the shortcomings of "everywhere" approach.

Close-up-August zj-Nemah Flats--is a picture at a benchmark there. Aug 2012 this is last year's peak crop of japonica there. This year's is less dense. Most likely reasons? A) The large concentration of waterfowl grubbing rhizomes here meant it had to regrow from seed and small rhizome fragments. B) 2013 Summer turned off cold and eelgrass does better at 70 degrees.

August zj-Nemah flats- is a wider view of the benchmarked area.

Close-up-December-eaten out zj bed-is the benchmarked area in Dec 2012. Bird counts way down, food supply down

Zostera marina



Present - Medium
 Present - Major

Zostera japonica



Present - Medium
 Present - Major

Z. marina
 Medium: 8774 Acres
 Major: 4988 Acres

Z japonica
 Medium: 8944 Acres
 Major: 3239 Acres

Interpolated *Zostera marina* & *Zostera japonica* density and distribution from 2006/2007 grid survey by USDA of 4238 points throughout Willapa Bay, WA.

WILLAPA ZM & ZJ
BENS

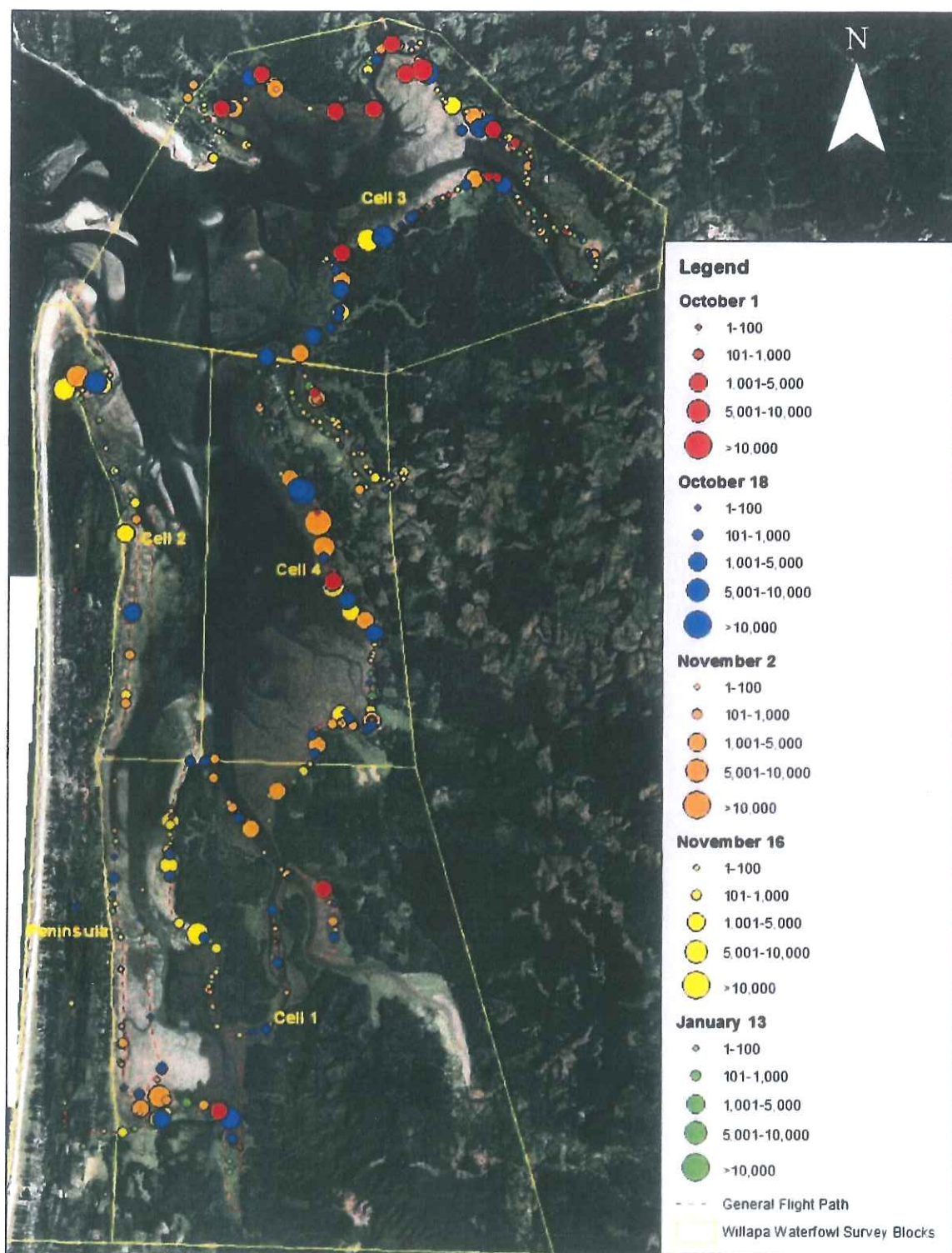


Figure 2. Image depicting the distribution and size of dabbling duck flocks observed during Willapa Bay aerial waterfowl surveys, October 2012–January 2013. Also included is the general flight path and boundaries of historical USFWS survey cells.

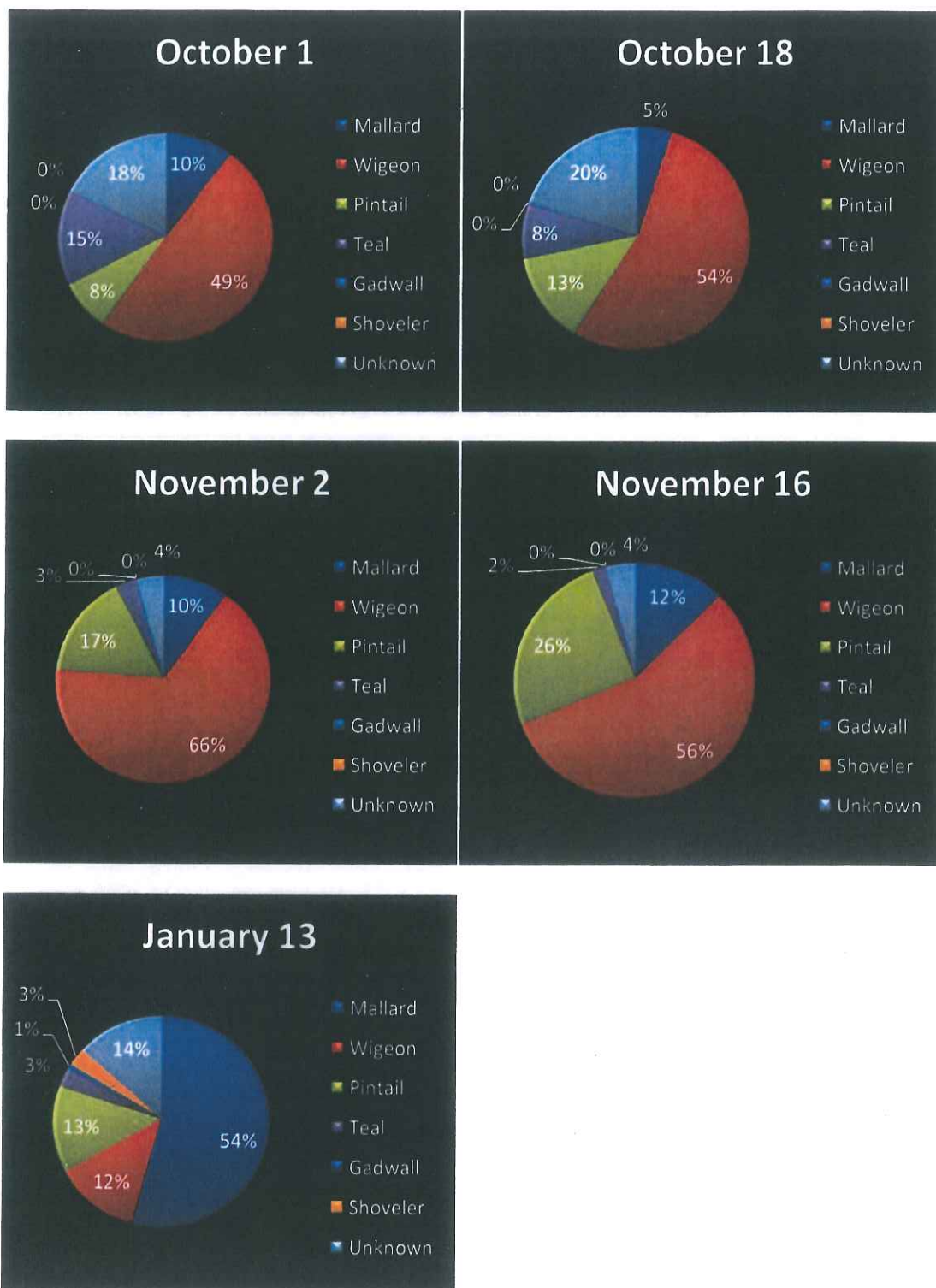
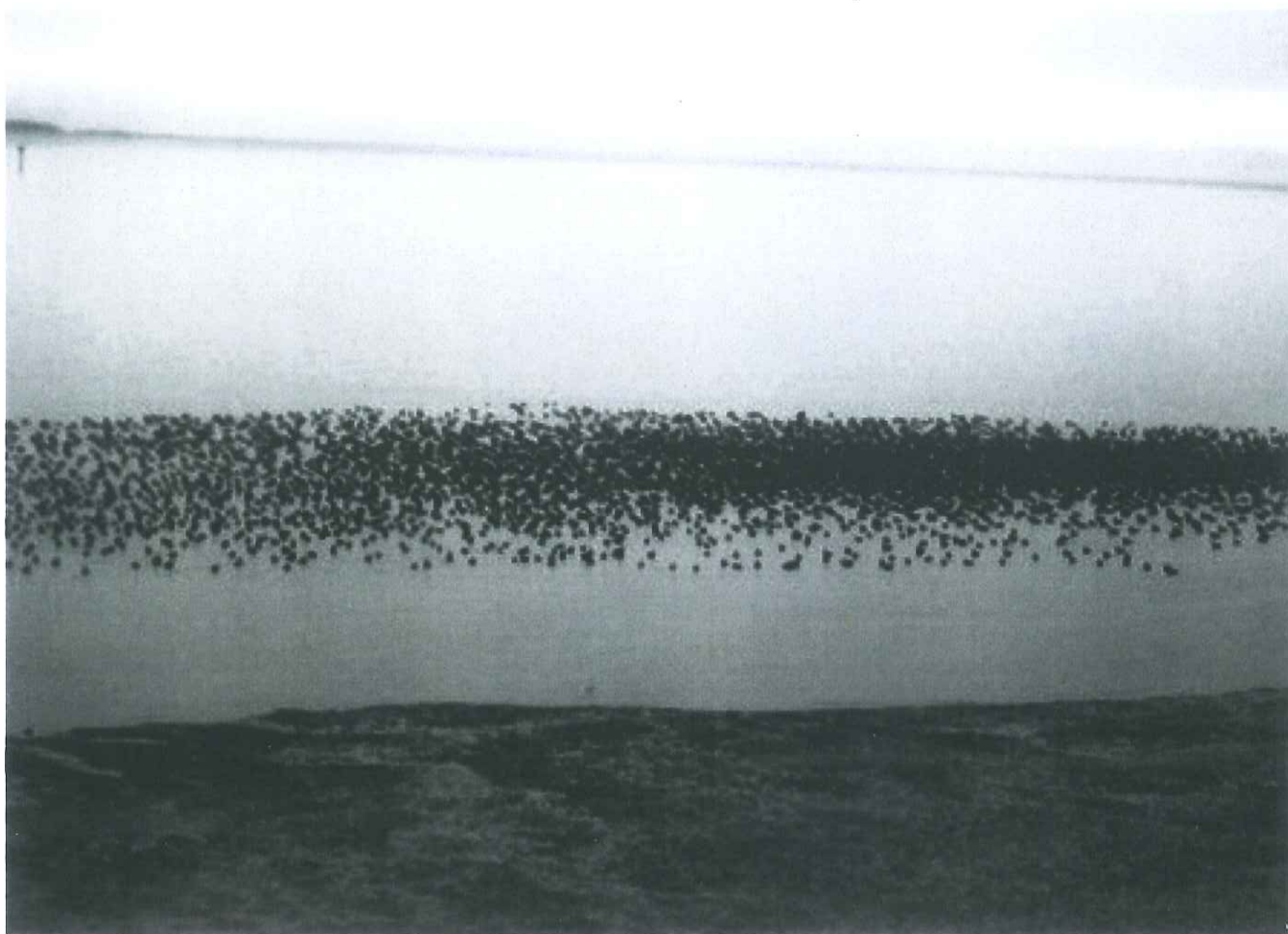


Figure 1. Species composition of dabbling ducks observed during Willapa Bay waterfowl survey flights, October 2012–January 2013.

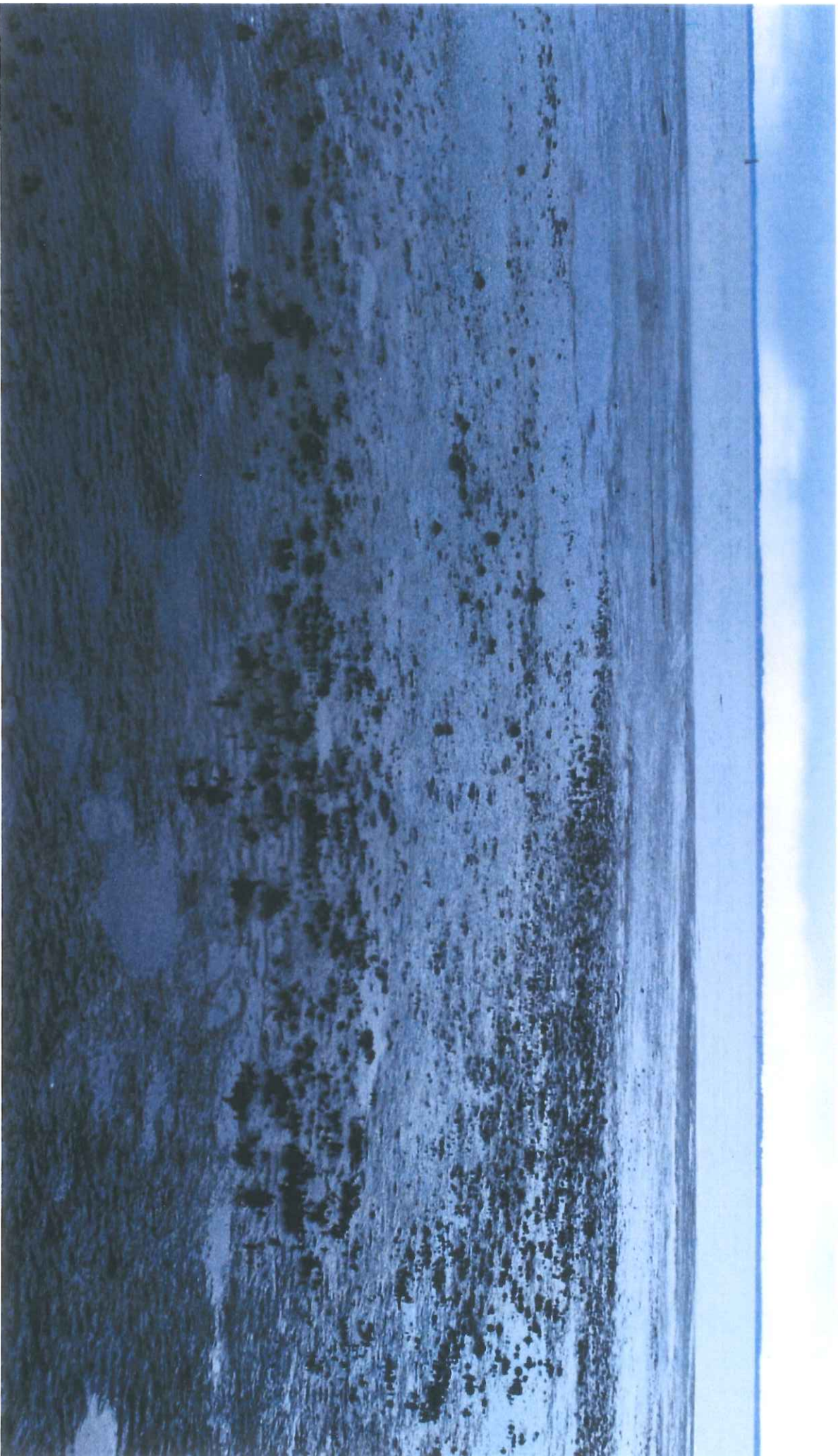


- GOT DUCKS ? -

AFTERMATH



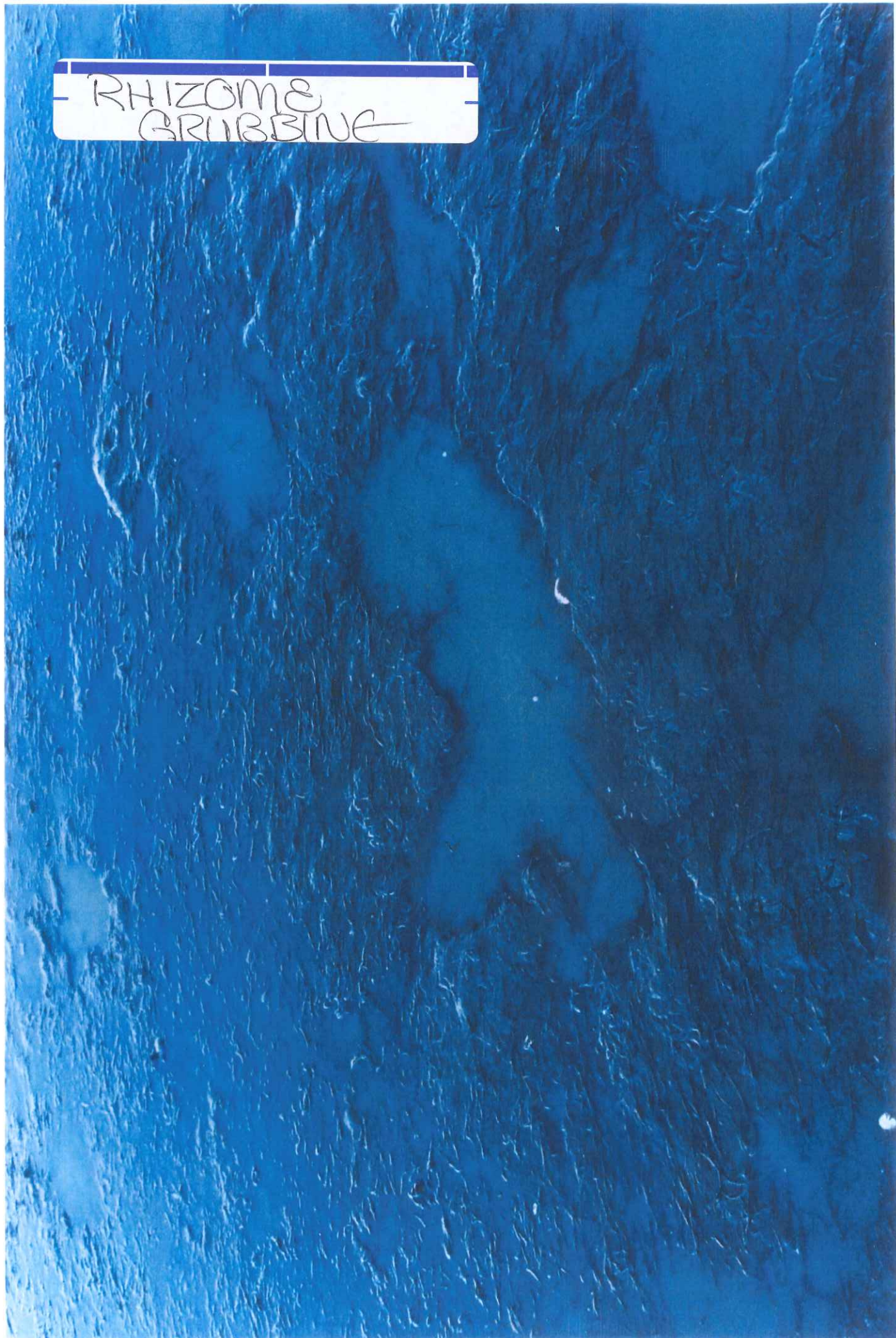
UNRECOVERED
SPARTINA CLONES



PINTAIL
CANOY



RHIZOME
GRUBBING





Morgan's Cove 2012

CLOSEUP - AUGUST 2
NEMAH FLATS





- AUGUST 27 -
Bismarck Falls

CLOSEUP DEC,
EATEN OUT ZJBEN

